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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,185	02/28/2002	Kazumasa Ueda	2185-0621P	4939

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EXAMINER	
UMEZ ERONINI, LYNETTE T	

ART UNIT	PAPER NUMBER
1765	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/084,185

Applicant(s)

UEDA ET AL.

Examiner

Lynette T. Umez-Eronini

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 9-12, 16, and 17 is/are rejected.
- 7) ☐ Claim(s) 2-4, 7, 8, 13-15, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This communication is in response to applicants' Remarks in Amendment filed on 2/12/2004. Applicants presented persuasive arguments (pages 2-3 of Remarks), which show the Wang reference fails to teach applicants' chelate resin particle. Hence, a new art rejection is presented.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5, 6, 9, 10, 11, 12, 16, and 17 and are rejected under 35 U.S.C. 102(b) as being anticipated by Obanawa et al. (US 4,732,887).

Obanawa teaches a composite porous material comprising a particulate inorganic porous material (same as applicants' inorganic particle) and an organic resin (same as applicants' chelate resin), (Abstract) and the chelate resin having a chelate ligand and a redox resin are useful to constitute, together with the particulate inorganic porous material (column 9, lines 17-22). Since Obanawa's composite comprises the same material as applicants' polish composition, then using Obanawa's composite in the same manner as in applicants' claimed invention would inherently result in,

a metal polish composition comprising a chelate particle and an inorganic particle, **in claim 1**;

wherein the zeta potential of a chelate resin particle and the zeta potential of an inorganic particle are in the same sign, **in claim 10**;

wherein the metal is a metal containing tantalum or tantalum nitride, **in claims 16-17**.

Obanawa teaches a chelate resin having a plurality of functional groups such as an oxide, a primary, secondary, and tertiary amine, a thioether, and a polyaminocarboxylic acid having a nitrogen atom such as iminodiacetic acid (column 9, lines line 62 – column 10, line 47), which reads on

wherein the chelate resin particle is a chelate resin particle having a functional group containing at least one atom selected from the group consisting of an oxygen atom, nitrogen atom, sulfur atom and phosphorus atom, **in claim 5**;

wherein the chelate resin particle is a chelate resin particle having a functional group containing at least one functional group selected from the group consisting of an aminocarboxylate group, aminophosphonate group, and iminodiacetate group, **in claim 6**.

Obinawa teaches the average pore diameter of the particulate inorganic pore material ranges from 20 to 2000 nm and more preferably from 50 to 1500 nm (column 5, lines 42-45) and the organic resin has a micro-void diameter not greater than 800 nm and no larger than 100 nm (column 6, lines 31-36) which encompasses and reads on,

wherein the chelate resin particle is a particle having an average particle size of 1.0  $\mu\text{m}$  or less, **in claim 9**;

wherein the inorganic particle is colloidal silica, **in claim 11**; and

wherein the ratio of the average particle size of chelate resin particles, A to the average particle size of inorganic particles, B, (A/B) is 30 or more, **in claim 12**.

***Allowable Subject Matter***

3. Claims 2-4, 7-8, and 13-15; 18; and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: As to claims 2-4; 7-8, 13-14; 15; 18; and 19, the prior art of record fails to teach, suggests or render obvious a polish composition comprising a chelate resin particle and an inorganic particle along with

a polishing accelerator;

a chelate resin particle having a functional group that is represented by the formula,  $^*\text{NR}_1\text{R}_2\text{R}_3\text{R}_4$  wherein  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$ , and  $\text{R}_4$  each independently represent a hydrogen atom, an alkyl group having 1 to 5 carbon atoms or a benzyl group;

an oxidizer;

a pH of 3-9 when made into an aqueous solution,

a polishing method of a metal with the metal composition, **in claim 18**; and

a polishing method of a metal film of a semiconductor device with the metal polish composition, **in claim 19**, respectively in combination with the rest of the limitations of the above claims;

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynette T. Umez-Eronini whose telephone number is 571-272-1470. The examiner is normally unavailable on the First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ltue

May 25, 2004

NADINE G. NORTON  
SUPERVISORY PATENT EXAMINER  
